LISTING OF CLAIMS

1. **(Previously Amended)** An x-ray tube component comprising:

a first powder metal component comprised of a material that is substantially non-transmissive to x-radiation; a second powder metal component, mixed with the first powder metal component in a manner so as to form a predetermined component shape; and wherein the mixture of the first powder metal component with the second powder metal component together limits the amount of x-radiation that is able to pass through the x-ray tube component to a predetermined level.

2. **(Previously Amended)** An x-ray tube as defined in claim 1, wherein the first powder metal component material includes tungsten.

3. **(Original)** An x-ray tube as defined in claim 2, wherein the tungsten is in an amount that is in a range from about 50% to about 99% by weight of the x-ray tube component.

4. **(Previously Amended)** An x-ray tube as defined in claim 1 wherein the second powder metal component includes copper.

5. **(Original)** An x-ray tube as defined in claim 4, wherein the copper is in an amount that is in a range from about 1% to about 50% by weight of the x-ray tube component.

6. **(Previously Amended)** An x-ray tube as defined in claim 1, wherein the first powder metal component comprises tungsten and the second powder metal component comprises copper.

7. **(Previously Amended)** An x-ray tube as defined in claim 6, wherein the x-ray tube component comprises:

approximately 80% by weight tungsten as first powder metal component; and

approximately 20% by weight copper as the second powder metal component.

8. **(Previously Amended)** An x-ray tube as defined in claim 1, wherein the second powder metal component includes at least one of the following: nickel, iron, cobalt, and aluminum.

9. **(Previously Amended)** An x-ray tube as defined in claim 1, wherein the x-ray tube component comprises:

90% by weight tungsten as the first powder metal component;

2% by weight iron as the second powder metal component; and

8% by weight nickel as a third powder metal component.

10. **(Previously Amended)** An x-ray tube component as defined in claim 1, wherein the first powder metal component includes at least one of the following: tungsten, copper, molybdenum, tantalum, steel, bismuth, lead, and alloys of the foregoing.

11. **(Original)** An x-ray tube component as defined in claim 1, wherein the component is formed at least partially as an x-ray tube evacuated housing.

12. **(Previously Amended)** An x-ray tube component as recited in claim 11, wherein the housing further comprises a bond layer that is disposed on the exterior surface of said x-ray tube housing, wherein the bond layer enhances the bond strength between said x-ray tube housing and a connected structure.

13. **(Previously Amended)** An x-ray generating apparatus comprising:

an integral housing forming a vacuum enclosure, at least a portion of the integral housing is formed of a mixture of powder metal components that together limit the amount of x-radiation that is able to pass through the portion of the integral housing to a predetermined level;

an anode assembly having a rotating anode with a target portion, the rotating anode being disposed within the vacuum enclosure; and

a cathode assembly, disposed within the vacuum enclosure, having an electron source capable of emitting electrons that strike the target portion to generate x-rays which are released through a window formed through a side of the integral housing.

14. **(Original)** An x-ray generating apparatus as defined in claim 13, further comprising a region containing a dielectric polymer material that is oriented so as to electrically

insulate at least a portion of a high voltage electrical connection to the x-ray generating apparatus.

15. **(Original)** An x-ray generating apparatus as defined in claim 13, further comprising means for transferring heat from the integral housing to a region exterior to the housing.

16. **(Original)** An x-ray generating apparatus as defined in claim 15, wherein the means for transmitting heat is comprised of a plurality of fin structures affixed to at least a portion of the exterior of the integral housing.

17. **(Original)** An x-ray generating apparatus as defined in claim 16, further comprising a bond coating that is applied to at least a portion of the integral housing and that facilitates a bond between the integral housing and the plurality of fins.

18. **(Previously Amended)** An x-ray generating apparatus as defined in claim 13, wherein the mixture of powder metal components comprise a first powder metal material that is substantially non-transmissive to x-radiation, and a second powder metal material, mixed with the first powder metal material, so as to form the integral housing portion.

19. **(Cancelled)** A method of manufacturing an x-ray tube component for use in an x-ray generating apparatus, the method comprising the steps of:

mixing two or more metallic powders to form a metallic powder mixture, at least one of the metallic powders comprising a dense x-ray absorbing material; and

forming the metallic powder mixture into a predetermined shape of the x-ray tube component.

20. **(Cancelled)** A method of manufacturing as defined in claim 19, wherein the dense x-ray absorbing material is selected from one of the following: tungsten, copper, molybdenum, tantalum, steel, bismuth, lead, and alloys of the foregoing.

21. **(Cancelled)** A method of manufacturing as defined in claim 19, wherein at least one of the two or more metallic powders is selected from one of the following: nickel, iron, ,copper, cobalt, or aluminum.

22. **(Cancelled)** A method of manufacturing as defined in claim 19, wherein the forming the metallic powder mixture into the shape of an x-ray tube component step comprises solidifying said metallic powder mixture.

23. **(Cancelled)** A method of manufacturing as defined in claim 22 wherein the forming the metallic powder mixture into the shape of an x-ray tube component step further comprises solidifying said metallic powder mixture using a hot isostatic pressing process to perform said solidifying.

24. **(Cancelled)** A method of manufacturing as defined in claim 22, wherein the forming the metallic powder mixture into the shape of an x-ray tube component housing step comprises forming a flat sheet of said solidified metallic mixture into the predetermined shape.

25. **(Previously Added)** The x-ray generating apparatus as defined in claim 13, wherein the mixture of powder metal components includes first and second powder metal components, the first powder metal component taking the form of a supporting matrix for the second powder metal component.

26. **(Previously Added)** The x-ray generating apparatus as defined in claim 13, wherein the mixture of powder metal components includes at least one powder metal component selected from the group consisting of: copper; nickel; iron; cobalt; and aluminum.

27. **(Previously Added)** The x-ray generating apparatus as defined in claim 13, wherein the mixture of powder metal components includes at least one powder metal component selected from the group consisting of: tungsten; copper; molybdenum; tantalum; steel; bismuth; lead; and alloys of each of the foregoing.

28. **(Previously Added)** The x-ray generating apparatus as defined in claim 13, wherein the mixture of powder metal components includes first and second powder metal components, the first powder metal component comprising a melt component and the second powder metal component comprising a radiation shield component.

29. (**Previously Added**) An x-ray tube component having a predetermined shape with at least one surface and comprising:

a first powder metal component; and

a second powder metal component mixed together with the first powder metal component to form the x-ray tube component in the predetermined shape, the second powder metal component comprising a material that is substantially non-transmissive with respect to x-radiation.

30. (**Previously Added**) The x-ray tube component as recited in claim 29, wherein the first powder metal component takes the form of a supporting matrix for the second powder metal component.

31. (**Previously Added**) The x-ray tube component as recited in claim 29, wherein the first powder metal component comprises at least one material selected from the group consisting of: copper; nickel; iron; cobalt; and aluminum.

32. (**Previously Added**) The x-ray tube component as recited in claim 29, wherein the second powder metal component comprises at least one material selected from the group consisting of: tungsten; copper; molybdenum; tantalum; steel; bismuth; lead; and alloys of each of the foregoing.

33. **(Previously Added)** The x-ray tube component as recited in claim 29, further comprising a third powder metal component mixed together with the first and second powder metal components.

34. **(Previously Added)** The x-ray tube component as recited in claim 33, wherein the third powder metal component substantially comprises chromium.

35. **(Previously Added)** The x-ray tube component as recited in claim 29, further comprising an oxidized layer disposed on at least a portion of the at least one surface of the x-ray tube component.

36. **(Previously Added)** The x-ray tube component as recited in claim 29, further comprising a bond layer disposed on at least a portion of the at least one surface of the x-ray tube component.

37. **(Previously Added)** The x-ray tube component as recited in claim 29, wherein the second powder metal component is in an amount that is in the range of about fifty percent to about ninety nine percent, by weight, of the x-ray tube component.

38. **(Previously Added)** The x-ray tube component as recited in claim 29, wherein the x-ray tube component comprises at least a portion of a billet.

39. **(Previously Added)** The x-ray tube component as recited in claim 29, further comprising a third powder metal component mixed together with the first and second powder metal components, the first, second and third power metal components collectively comprising heavy metal alloy.

40. **(Previously Added)** The x-ray tube component as recited in claim 29, wherein the second powder metal component comprises a tungsten-aluminum alloy.